

REMARKS

The Office Action of July 26, 2004, has been received and reviewed. The interview with the examiner is appreciated. Claims 119 and 135 have been amended in a manner consistent with the discussions during the interview. Claim 81 has been amended for grammatical reasons only; i.e., to add an "and" to the claim. It is not believed that this change narrows the claim or affects the noted allowance of the claim. Reconsideration of the application as amended is respectfully requested.

Applicants submit a new Figure 4 to replace the original Figure 4. The original Figure 4 included a step in the front bearing face of boss 24. This step is not shown in corresponding Figures 2 or 6. For consistency, this step has been eliminated in the new Figure 4. Replacement of Drawing Sheet 2 of 8 from the originally issued patent is requested. No changes have been made to Figure 3.

Applicants note that a new reissue declaration is required, but request that this requirement be held in abeyance until prosecution of the claims has been completed.

Claim 119 pertains to a wear assembly having a boss, a wear member and a lock. As discussed during the interview, the lock is received into an opening in the wear member and maintained to one side of the lip for engagement between bearing faces formed on the boss and the wear member to retain the wear member to the lip. The lock includes an adjustment member that expands the lock

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between the bearing surfaces and moves the wear member rearward to tighten the mounting of the wear member on the lip.

This claim has been rejected under 35 USC § 103 as being obvious on the basis of US Patent No. 5,088,214 to Jones in view of US Patent No. 4,433,496 to Jones et al. Applicants wish to make one clarification in regard to a comment made in an earlier response in regard to the '496 patent. On page 3 of the response filed May 17, 2004, Applicants noted that without the tight pinching provided by the lock, the adapter in the '496 patent would simply fall off the lip. While some tightening is required to prevent loss of the wear member, we note that the patent recognizes that some looseness can be tolerated (col. 3, lines 42-44). It is not believed that this clarification alters the basic argument made in the previous response. This rejection is further traversed for the reasons set forth below.

As discussed during the interview, the '214 patent discloses a wear member that is designed to achieve the conflicting goals of being reliably locked in place and yet still easily replaced in the field (col. 1, lines 39-43). In the past, wear members had commonly been welded to the lip, such as disclosed in US Patent No. 4,577,423 to Hahn. While welding provided a firm attachment of the part to the lip, the part was not easily removed. Typically, the bucket would need to be taken out of production so that the wear parts could be replaced in a shop. In an effort to avoid welding, it was also common to use a mechanical attachment known as a Whisler connection. For example, as seen in US Patent No. 4,267,653 to

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Hahn et al., a Whisler connection includes a generally C-shaped spool 17 and a wedge 19. The spool is fit into a through-hole formed in the lip such that its arms overlie the rear of the wear member and the lip. The wedge is then hammered into position so that the lock is tightly held in the opening. While this type of locking arrangement permitted the wear member to be replaced in the field, it also required a through-hole to be formed in the lip. As can be appreciated, the formation of a series of through-holes in the lip tended to weaken the lip. According to the '214 patent, a wear member can be mechanically attached to a lip for easy replacement and without the formation of a through-hole in the lip.

US Patent No. 4,433,496 to Jones et al. discloses a modified Whisler-style locking arrangement. In particular, the lock includes a C-shaped spool member 26 and a wedge 28. In this construction, the wedge 28 is pushed into the opening via a screw 33 rather than a hammer. Nevertheless, a through-hole is still required to be formed in the lip. Indeed, the lock will not operate unless the spool 26 can be anchored by gripping the lip with its arms.

Applicants submit that it would not have been obvious to one of ordinary skill in the art to have provided the '214 patent with an adjustable lock as shown in the '496 patent. First, the lock in the '214 patent was intended to be of a simple construction so as to avoid the need for an extensive lock (col. 4, lines 60-62). Clearly, the lock in the '496 patent is a complex lock comprising multiple moving parts – the very kind the '214 patent seeks to avoid. Second, the wear assembly in the '214 patent is designed with the expectation that the wear member will shift

during use (col. 3, lines 63-66 and col. 5, lines 24-27). Accordingly, there is no recognized need in the '214 patent for the use of a complex lock to tighten the assembly and thereby prevent movement of the wear member. Indeed, as noted above, the intent of the '214 patent is to provide a simple but sturdy lock to hold the lock in place. Hence, it would have been contrary to the intention of the '214 patent to replace the disclosed lock with a complex lock such as disclosed by the '496 patent to tighten the wear member on the lip.

Moreover, the '496 patent suggests the use of a lock that can be tightened by being anchored in a through-hole in the lip. As noted above, the lock will not work unless the spool is properly anchored by passing through the lip and placing its arms over each side of the lip. Hence, if anything, the '496 patent only suggests the use of a lock that fits into a through-hole formed in the lip. Claim 119, however, now recites that the lock is received into the opening in the wear member and maintained to one side of the lip for engagement between bearing surfaces on the boss and the wear member.

Accordingly, Applicants submit that it would not have been obvious to modify the assembly of the '214 patent in view of the '496 patent to achieve the construction of claim 119.

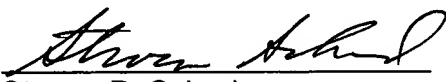
Claim 135 pertains to a wear member for mounting on a lip of an excavator having a fixed boss. This claim has also been rejected under 35 USC 103 as being obvious on the basis of the '214 patent in view of the '496 patent. This rejection is traversed.

Claim 135 recites a wear member that includes (i) a forwardly-facing bearing surface in the opening for the lock and (ii) a rearwardly-facing bearing surface at the front end of the slot to abut against a front wall of the boss in face-to-face contact. As seen in Figure 2 of the '214 patent, the wear member is not formed to abut against the front wall of the boss. Rather, a gap is provided to prevent such abutting of the wear member and the lock (see col. 5, lines 27-34). Even if under some loading contact with the front wall at the upper corner could occur, this contact would not be face-to-face contact as claimed.

For all of the above-discussed reasons, Applicants submit that claims 119-124, 135-137, 139 and 140 are allowable along with claims 1-118, 125-134 and 138. A notice to this effect is earnestly solicited.

Respectfully submitted,

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APPENDIX

The following claims are set forth to show the manner in which the claims have been amended relative to their form prior to the entry of this response to the outstanding Office Action. The new material has been underlined and the deleted material struck out.

81. (Four times Amended) A wear assembly for an excavator having a lip with a front edge face for digging, the wear assembly comprising:

a boss adapted to be fixed to an excavator lip, the boss including a front structure with an inner surface that is bent and fixed along a face of the lip and the digging edge, a rear structure having a first shoulder that extends generally away from the digging edge, and a bearing surface, wherein the rear structure includes a rearwardly extending leg that substantially overlies the lip, and the front structure wraps around the digging edge to define a second leg;

a wear member including a second shoulder that engages the first shoulder to hold the wear member to the boss and prevent release of the wear member in a direction perpendicular to the extension of the front shoulder, and an opening; and

a lock received into the opening in the wear member and in contact with the bearing surface of the boss to prevent disconnection of the first and second shoulders and thereby retain the wear member to the boss.

119. (Amended) A wear assembly for attachment along a lip of an excavator comprising:

a boss fixed to the lip;

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a wear member having (i) a forwardly projecting working end, (ii) a rearwardly extending leg having an inner side adapted to face the lip, a rear wall generally transverse to the inner side, and a longitudinal slot open in the inner side and the rear wall of the leg to receive the boss and thereby provide support to the position of the wear member on the lip, and (iii) an opening; and

a lock received into the opening and maintained to one side of the lip for engagement between bearing surfaces on the boss and the wear member to retain the wear member to the lip, the lock including a body and an adjustment member movably secured to the body such that movement of the adjustment member relative to the body expands the lock between the bearing surfaces and thereby moves the wear member rearward to thereby tighten the mounting of the wear member on the lip.

135. (Amended) A wear member for mounting on a front lip of an excavator having a fixed boss, the wear member comprising (i) a forwardly projecting working end, (ii) a rearwardly extending leg having an inner side to face the lip, a rear wall generally transverse to the inner side, and a longitudinal slot open in the inner side and the rear wall of the leg to receive the boss and thereby provide support to the position of the wear member on the lip, the slot including a rearwardly-facing bearing surface at a front end thereof for abutting against a front wall of the boss in face-to-face contact for resisting rearwardly directed loading on the wear member during use, and (iii) a lock receiving opening extending through the wear member and having a first forwardly-facing bearing surface extending

generally transverse to the lip to contact the lock, and (iv) ~~a second rearwardly-facing bearing surface extending generally transverse to the lip at a front end of the slot for abutting against at least a substantial portion of a front wall of the boss.~~